

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) Vitrification furnace comprising:

\_\_\_\_\_ a crucible; ~~(1, 2, 3)~~ and

\_\_\_\_\_ ~~heating means comprising~~ at least one plasma torch ~~(5)~~ on an upper part of the crucible and at least one inductor winding ~~[(4),]~~ outside the crucible, characterised in that the inductor winding is arranged under the crucible.

2. (Currently Amended) Vitrification furnace according to claim 1, characterised in that the crucible comprises a sole plate ~~(2)~~ made of refractory material and a shell ~~(4)~~ placed upright on the sole plate ~~(2)~~, the shell ~~(4)~~ having a continuous structure around ~~[[the]]~~ a circumference and being made of metallic material.

3. (Currently Amended) Vitrification furnace according to claim 1, ~~characterised in that the heating means comprise~~ wherein the at least one plasma torch further comprises a first plasma torch and a second plasma torch, the first and second plasma torches configured to be ~~being~~ electrically polarised to create an arc between each other.

4. (Currently Amended) Vitrification furnace according to claim 3, characterised in that the torches are ~~mobile~~ moveable in the crucible.

5. (Currently Amended) Vitrification furnace according to claim 4, characterised in that the torches are free to slide approximately vertically with respect to the inductor winding.

6. (Previously Presented) Vitrification furnace according to claim 1, characterised in that the torch is laterally offset from the inductor winding.

Claims 7-10 (Cancelled)

11. (New) Vitrification furnace according to claim 1, wherein the plasma torch utilizes oxygen plasma to create an oxidising atmosphere in the furnace.

12. (New) Vitrification furnace according to claim 11, characterised in that the oxidising atmosphere in the furnace prevents formation of a metallic phase in furnace load contents in the crucible.

13. (New) Vitrification furnace according to claim 1, wherein the torch exclusively heats furnace load content initially, wherein the torch and inductor winding both operate thereafter to simultaneously heat the furnace load contents.

14. (New) Vitrification furnace according to claim 5, characterised in that the first and second torches heat the furnace load in the crucible and are brought close to the furnace load contents during heating.